Due to the diversity in state/provincial, local, and federal laws and codes that govern the design and application of architectural products, it is the responsibility of the individual architect, owner, and installer to ensure that products selected for use on projects comply with all applicable building codes and laws. U.S. Aluminum exercises no control over the use or application of its products, glazing materials, and operating hardware, and assumes no responsibility thereof.

The rapidly changing technology within the architectural aluminum products industry demands that U.S. Aluminum reserve the right to revise, discontinue or change any product line, specification or electronic media without prior written notice.

NOTE: Dimensions in parentheses ( ) are millimeters unless otherwise noted.

Other metric units shown in this publication are:
- m - meter
- Kg - kilogram
- Pa - pascal
- KPa - kilopascal
- MPa - megapascal
Specifications

SECTION 08 44 13 ALUMINUM CURTAIN WALL SYSTEMS

I. GENERAL DESCRIPTION
Work Included: Furnish all necessary materials, labor, and equipment for the complete installation of aluminum framing as shown on the drawings and specified herein. (Specifier Note: It is suggested that related items such as aluminum entrance doors, glass, and sealants be included whenever possible.)
Work Not Included: Structural support of the framing system, interior closures, and trim. (Specifier list other exclusions). Related Work Specified Elsewhere: (Specifier list)

QUALITY ASSURANCE
Drawings and specifications are based on the High Performance Triple Glaze Series HP3253 Curtain Wall System as manufactured by U.S. Aluminum. Whenever substitute products are to be considered, supporting technical literature, samples, drawings, and performance data must be submitted 10 days prior to bid in order to make a valid comparison of the products involved.

PERFORMANCE REQUIREMENTS
Air Infiltration: shall be tested in accordance with ASTM E283. Infiltration shall not exceed .06 CFM per square foot (.0003m3/ sm2) fixed area when tested at 6.24 psf (300 Pa).
Water Infiltration: shall be tested in accordance with ASTM E331. No water penetration at test pressure of 15 psf (718 Pa).
Structural Performance: shall be tested in accordance with ASTM E330 and based on:
• Maximum deflection of L/175 of the span
• Allowable stress with a safety factor of 1.65
The system shall perform to this criteria under a windload of (Specify) psf.
System shall exceed maximum seismic lateral displacement requirements specified in section 1628.8.2 of the Uniform Building Code, 1994 edition.

Upon successful completion of the Phase I seismic testing, the curtain wall shall once again be subjected to and must successfully pass the air and water infiltration tests specified above before proceeding to Phase II testing.

Thermal Performance: Series HP3253 shall be tested in accordance with NFRC. NFRC’s Condensation Resistance rating is NOT equivalent to a Condensation Resistance Factor (CRF) determined in accordance with AAMA 1503, and NFRC-100.

Testing Procedures: ASTM 283, E 331, and E 330 - Laboratory performance testing. AAMA 503-08 - Newly installed curtain walls. AAMA 511-08 - Installed curtain walls after six months.

II. PRODUCTS MATERIALS
Extrusions shall be 6063-T6 alloy and temper (ASTM B221 alloy T5 temper). Fasteners, where exposed, shall be aluminum, stainless steel or zinc plated steel in accordance with ASTM A 164. Perimeter anchors shall be aluminum or steel, providing the steel is properly isolated from the aluminum. For vertical silicone glazing, system shall provide conventional glass support at horizontal and perimeter members, and structural silicone support at intermediate verticals. Horizontal members and jamb configurations shall allow for pockets to receive E.P.D.M. elastomeric extruded glazing gaskets. Interior vertical glass spacers shall be extruded silicone compatible E.P.D.M. All materials that come in contact with the silicone should be tested for compatibility. Samples of aluminum vertical mullions shall be submitted to the silicone manufacturer for adhesion evaluation.

Finish
All exposed framing surfaces shall be free of scratches and other serious blemishes. Aluminum extrusions shall be given a caustic etch followed by an anodic oxide treatment to obtain...

Specify one of the following:
• #11 Clear anodic coating
• #22 Dark Bronze anodic coating
• #33 Black anodic coating

Fluoropolymer paint coating conforming with the requirements of AAMA 2605. Color shall be (Specify a U.S. Aluminum standard color).

FABRICATION
All mullions and horizontals shall have flexible polyurethane thermal break material located on exterior side of glass plane. Exterior glazing seal gasket shall be secured by extruded aluminum pressure plates fastened to main grid members. Provisions shall be made at all sealed horizontal to weep moisture accumulation to the exterior. A cover shall be snapped over pressure plate to show only a sharp, uninterrupted exterior profile. Framing members shall provide for straight in glazing on all sides, with through sight lines and no projecting stops or face joints. Vertical and horizontal framing members shall have a nominal width of 2-1/2” (63.5). Overall depth of system shall be (Specify). System shall provide for two piece horizontal framing so that all fasteners at intersection of horizontal and vertical members will be concealed.

III. EXECUTION INSTALLATION
All glass framing shall be set in correct locations as shown in the details and shall be level, square, plumb, and in alignment with other work in accordance with the manufacturer’s installation instructions and approved shop drawings. All joints between framing and the building structure shall be sealed in order to secure a watertight installation.

PROTECTION AND CLEANING
After installation the General Contractor shall adequately protect exposed portions of aluminum surfaces from damage by grinding and polishing compounds, plaster, lime, acid, cement, or other contaminants. The General Contractor shall be responsible for final cleaning.
Series HP3253 Curtain Wall System brings ultra high thermal performance to your curtain wall options. Series HP3253 system utilizes 2" (51) triple pane glazing, and Series HP3253SG combines the horizontals mullions of the HP3253 with structural glazed vertical mullions.

**SERIES HP3253**
High Performance Captured Vertical Glazed Curtain Wall

**SERIES HP3253SG**
High Performance Structural Silicone Vertical Glazed Curtain Wall

<table>
<thead>
<tr>
<th>SERIES</th>
<th>WIDTH</th>
<th>DEPTHS*</th>
<th>GLAZING INFILL</th>
<th>APPLICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP3253</td>
<td>2-1/2&quot; (63.5)</td>
<td>8&quot; (203.2)</td>
<td>2&quot; (51) Triple Pane Vision 1&quot; (25) Double Pane Spandrel or 1/4&quot; (6) Spandrel</td>
<td>Low-Rise to Mid-Rise Buildings Where High Performance Exterior Glazing is Required</td>
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<tr>
<td>HP3253SG</td>
<td>2-1/2&quot; (63.5)</td>
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<td>Low-Rise to Mid-Rise Buildings Where High Performance Exterior Glazing is Required</td>
</tr>
</tbody>
</table>

* Other depths available upon request

**GLASS SIZES**

Glass Width and Height = Daylight Opening + 1" (25.4)

** These formula do not take into account glass tolerances. Consult glass manufacturer before ordering glass.
Special Features

- Extruded Aluminum Mullion Anchors
- Extruded Shear Blocks are Furnished to Ensure Extra Strong Horizontal to Vertical Joinery
- Injection Molded End Dams and Closure Plates Used for Controlling Water Infiltration

Complementing the efficiency of insulated glass, Series HP3253 High Performance Curtain Wall Systems are Thermally Broken by a continuous Thermal Spacer interlocked with pressure plates and our Fill and Debridge Technology. The HP3253 uses two Fill and Debridge pockets with the Thermal Spacer providing Three Thermal Break Points. Dual colors can be achieved by specifying different finishes for the exterior face covers and interior mullions. Two piece horizontals and extruded shear blocks allow for a concealed horizontal to vertical joinery without exposed screws. These joint intersections also have Concealed Injection Molded End Dams for controlling any infiltrated water. See page 14-J5 for additional information on accessories.

NOTE: To accelerate installation times with pinpoint accuracy of Horizontal Shear Blocks to Curtain Wall Mullions see pages 56-P1 and 57-P1.

Online usalum.com    By Phone (800) 262-5151 Ext. 5305
Online crlaurence.com    By Phone (800) 421-6144 Ext. 5305
CURTAIN WALLS

Typical Details
VERTICAL MULLIONS
FOR 2” (51) TRIPLE GLAZING

NOTE: Part numbers shown are available in 24’ (7.3 m) stock lengths. Visit usalum.com for more information.

High Performance
Thermally Broken
• Series HP3253
• Series HP3253SG
Patent No. 7,975,442

SERIES HP3253
Captured Vertical Glazed Curtain Wall

SERIES HP3253SG
Structural Silicone Vertical Glazed Curtain Wall

NOT TO SCALE
Typical Details
5" (127) OPEN BACK AND TUBULAR HORIZONTAL MULLIONS
FOR 2" (51) TRIPLE GLAZING

NOTE: Part numbers shown are available in 24' (7.3 m) stock lengths. Visit usalam.com for more information. Other size back members available upon request.

NOTE: Tubular Horizontals Must be Used When Span Exceeds 6' 0" (1.83 m) or if Deadload Exceeds 250 lbs. (113.4 Kg).

TYPICAL ELEVATION

Tubular Horizontals
Top and Bottom Anchors
AP965 @ Captured Vertical
AP995 @ Butt Glaze Vertical
AP975 @ Jambs (Captured)

Open Back Horizontals
Top and Bottom Anchors
AP965 @ Captured Vertical
AP995 @ Butt Glaze Vertical
AP975 @ Jambs (Captured)

NOTE: Patent No. 7,975,442

ONLINE
usalum.com

BY PHONE
(800) 262-5151 Ext. 5305

OTHER SIZE BACK MEMBERS AVAILABLE UPON REQUEST.
Typical Details

2" (51) TO 1" (25)
TRANSITION GLAZING

5" (127) Back Member Shown; Other Sizes Available
Upon Request. Transitions are Similar.

NOTE: Part numbers shown are available in 24' (7.3 m) stock lengths. Visit usalum.com for more information.

Online usalum.com  By Phone (800) 262-5151 Ext. 5305
Online crlaurence.com  By Phone (800) 421-6144 Ext. 5305
Typical Details

2" (51) TO 1/4" (6)

TRANSLATION GLAZING

5" (127) Back Member Shown; Other Sizes Available
Upon Request. Transitions are Similar.

NOTE: Part numbers shown are available in 24' (7.3 m) stock lengths. Visit usalum.com for more information.
Typical Details
INSIDE AND OUTSIDE CORNERS

NOTE: Part numbers shown are available in 24’ (7.3 m) stock lengths. Visit usalum.com for more information.

Top and Bottom Anchors
AP960 @ Outside 90 Degree
AP975 @ Inside 90 Degree 5” (127) Back Member

High Performance Thermally Broken
• Series HP3253
Patent No. 7,975,442

Series HP3253
Captured Glazed Curtain Wall
Typical Details

THERMAL ENTRANCE WITH SUB-FRAME

1. Surface Mount Closer
2. Overhead Concealed Closer

TYPICAL ELEVATION

ROUGH OPENING FRAME DIMENSION

D.O. 

1. 11/16" (17.5)
2. 6" (152.4)
3. 7" (177.8)

NOTE: NOT TO SCALE

High Performance
Triple Thermally Broken
• Series HP3253

Patent No. 7,975,442

Series HP3253 Curtain Wall Shown With Series 550-T Wide Stile Thermal Entrance Door.

NOTE: 5" Open Back and Tubular Horizontals Shown. Other Depth Open Back Horizontals and Tubular Horizontals are Similar.

Online usalum.com By Phone (800) 262-5151 Ext. 5305
Online crlaurence.com By Phone (800) 421-6144 Ext. 5305
Typical Details
MID-SPAN ANCHORS AND MULLIONS SPLICE

Typically Details
High Performance
Thermally Broken
• Series HP3253
• Series HP3253SG
Patent No. 7,975,442

TYPICAL ELEVATION  SECTION DETAIL

Coping is shown in concept only.

NOT TO SCALE
Windload Charts

CAPTURED VERTICAL MULLIONS
FOR 2" (51) TRIPLE GLAZING

Deflection criteria to be in accordance with AAMA TIR-A11 - L/175 or L/240 + 1/4" (6.4 mm) for spans greater than 13'-6" (4.1 m) but less than 40'-0" (12.2 m). Codes and specifications may vary. No single lite of glass shall deflect more than 3/4" (19 mm). Glass is not considered as contributing to resistance of deflection. Aluminum alloy 6063-T6 allowable stress for windload is 15,200 psi. (89 MPa), and steel reinforcing allowable stress for windload is 21,600 psi. (183 MPa).

These charts include unbraced length analysis and are based on at least one horizontal being placed at the midpoint of the span. For other applications, please contact U.S. Aluminum Technical Sales at (800) 262-5151, or visit our web site at usalum.com.

High Performance Thermally Broken
• Series HP3253
• Series HP3253SG

SERIES HP3253
High Performance Captured Vertical Glazed Curtain Wall

SERIES HP3253SG
Structural Silicone High Performance Vertical Glazed Curtain Wall
Deadload Charts

OPEN BACK HORIZONTAL MULLIONS
FOR 2" (51) TRIPLE GLAZING

Deadload charts are based on 1/8" (3.2) maximum deflection at the centerpoint of the horizontal member and on a glass weight of 9.75 psf (47.60 Kg/m²).

Glass shall rest on two setting blocks located at:
- **CURVES A:** 1/4 points
- **CURVES B:** 1/8 points or 8" (203.2) from corners, whichever is larger

**PT325**

- $I_{yy} = 0.952$
- $S_{yy} = 0.630$

**TUBULAR HORIZONTAL MULLIONS**

FOR 2" (51) TRIPLE GLAZING

**PT305**

- $I_{yy} = 1.605$
- $S_{yy} = 1.274$
## Accessories
### FOR 5" (127) MULLION DEPTH

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<thead>
<tr>
<th>PART NO.</th>
<th>DETAIL</th>
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<tbody>
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<td>AP926</td>
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<td>Shear Block Inside and Outside Corners (Includes Screws)</td>
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<tr>
<td>HD885</td>
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<td>End Dam for Captured Mullions For 2&quot; (51) Glass</td>
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<tr>
<td>ED503</td>
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<td>End Dam for Butt Glaze Mullions for 2&quot; (51) Glass</td>
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<tr>
<td>CP885</td>
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<td>Closure Plate for Captured Mullions</td>
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<tr>
<td>CP948</td>
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<td>Closure Plate for Vertical Mullions</td>
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<td>CP953</td>
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<td>Closure Plate for Outside Corner</td>
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<tr>
<td>CW368</td>
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<td>Temporary Glass Retainer for Captured Mullions</td>
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<tr>
<td>WD961</td>
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<td>Water Dam for Outside Corner</td>
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<td>Screw for Pressure Bar 1/4&quot;-20 x 1&quot; (25) HWHCS with SRG5</td>
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<td>Setting Block for 2&quot; (51) Glass; 4&quot; (101.6) Long</td>
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<td>SB910</td>
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<td>SB925</td>
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<td>Transition Glazing Setting Block for 1/4&quot; (6) Glass; 4&quot; (101.6) Long</td>
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<table>
<thead>
<tr>
<th>PART NO.</th>
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<td>AP965</td>
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<td>Intermediate Vertical Anchor at Head and Sill for PT605</td>
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<tr>
<td>AP995</td>
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<td>Intermediate Vertical Anchor at Head and Sill for CW935</td>
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<td>AP975</td>
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<td>Wall Jamb Anchor at Head and Sill for PT605</td>
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<td>AP960</td>
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<td>Outside 90 Degree Corner Anchor at Head and Sill for CW960</td>
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<td>SL945</td>
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<td>Mullion Splice Sleeve for PT605</td>
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<td>SL935</td>
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<td>Mullion Splice Sleeve for CW935</td>
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<td>SL960</td>
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<td>Outside 90 Degree Corner Mullion Splice Sleeve for CW960</td>
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<td>NP430</td>
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<td>Exterior Gasket</td>
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<td>Interior Gasket</td>
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<td>SP450</td>
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<td>Spacer Gasket for Butt Glaze</td>
<td>250' Roll</td>
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<td>RG720</td>
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<td>Edge Block 11/16&quot; x 2-1/2&quot; (17.5 x 63.5)</td>
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